

Message Text

PAGE 01 STATE 096963

61

ORIGIN EUR-12

INFO OCT-01 ARA-10 EA-10 ISO-00 ACDA-10 CEQ-01 CIAE-00

DOT-00 EPA-04 HEW-06 HUD-02 INR-07 INT-05 L-02

NSAE-00 NSC-05 NSF-02 OIC-02 PA-02 PM-03 PRS-01

SAJ-01 OES-05 SP-02 SS-15 TRSE-00 USIA-15 FEA-01

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FM SECSTATE WASHDC

TO ALL NATO CAPITALS

AMEMBASSY MANILA

AMEMBASSY TOKYO

AMEMBASSY WELLINGTON

AMEMBASSY JAKARTA

AMEMBASSY SAN SALVADOR

AMEMBASSY MEXICO

AMEMBASSY STOCKHOLM

AMEMBASSY MANAGUA

UNCLAS STATE 096963

E.O. 11652: N/A

TAGS: CCMS ENRG

SUBJECT: CCMS: SMALL POWER PLANTS GEOTHERMAL CONFERENCE,
JUNE 2, 1975, BERKELEY,CALIFORNIA

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PAGE 02 STATE 096963

REF: (A) USNATO 2002; (B) STATE 74409 (NOTAL);

- (C) LISBON 2337 (NOTAL)

1. IN CONVERSATIONS WITH PORTUGUESE OFFICIALS ON APRIL 22,

CCMS GEOTHERMAL COORDINATOR, DR. JAMES BRESEE CONFIRMED
AGENDA AND PROGRAM FOR US-PORTUGUESE CO-HOSTED SMALL POWER
PLANTS CONFERENCE, JUNE 2, 1975 (INVITATION SENT REFTEL A).

2. DATES FOR SECOND MEETING WERE SET FOR SEPTEMBER 8-11,
1975 ON SAO MIGUEL IN THE AZORES. SECOND MEETING WILL
CONSIST OF TWO DAYS OF WORK SESSIONS AND TWO DAYS OF
FIELD TRIPS ON SAO MIGUEL. FURTHER INFORMATION WILL BE
SENT LATER.

3. REQUEST EMBASSIES PASS FOLLOWING AGENDA AND PROGRAM
TO THOSE OFFICIALS TO WHOM INVITATION TO BERKELEY MEETING
WAS PREVIOUSLY EXTENDED:

BEGIN TEXT OF AGENDA

CCMS -- SMALL GEOTHERMAL POWER PLANT - JUNE 2, 1975

0900 INTRODUCTION - DR. JAMES C. BRESEE, ERDA
0930 REVIEW OF PROPOSED OUTLINE - ANDERS W. LUNDBERG,LLL
- BREAK
1030 A SPECIFIC PROPOSAL FOR A FLASHED STEAM SYSTEM -
- ROGERS ENGINEERING COMPANY
1200 LUNCH
1330 OUTLINE PLANS FOR SEPTEMBER 8-11 AZORES MEETING
- (PACKAGES OF AZORES GEOTHERMAL DATA BACKGROUND
- INFO WILL BE DISTRIBUTED)
1530 TOUR OF CAMPUS, LAWRENCE HALL OF SCIENCE
1700 END

BEGIN PROGRAM

SMALL POWER PLANTS FOR HOT WATER GEOTHERMAL RESOURCES

ABSTRACT

A THREE-PHASE PROGRAM IS OUTLINED FOR DESIGN OF SMALL
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PAGE 03 STATE 096963

(2-5 MW)POWERPLANTS FOR UTILIZATION OF HOT WATER FROM
GEOTHERMAL SOURCES. PHASE I SUMMARIZES APPROPRIATE INFOR-
MATION AND EXPERIENCE, PHASE II IS APPLICATION OF THE
CONCEPT TO A SPECIFIC SITE AND PHASE III IS A FINAL REPORT
ON RESULTS.

DURING THE CCMS GEOTHERMAL ENERGY MEETING IN CALIFORNIA
IN OCTOBER 1974, THERE WAS CONSIDERABLE INTEREST EXPRESSED
IN THE POSSIBILITIES OF A JOINT PROJECT ON SMALL POWER
PLANTS. THIS PAPER IS INTENDED TO BEGIN THE PROCESS OF
DEFINING A WORTHWHILE JOINT PORJECT AND THE METHODS OF
CARRYING IT OUT.

AMONG THE POTENTIAL PARTICIPATING COUNTRIES THERE IS A GREAT VARIETY OF NEEDS AND INTERESTS. THE PROGRAM OUTLINED BELOW WILL HELP ALL PARTICIPANTS BY SHARING EXPERIENCES, BY COMPILING THE INTERESTS, AND BY SUMMARIZING CAPABILITIES AND EXISTING NATIONAL ACTIVITIES RELATING TO SMALL POWER PLANTS.

THE PROJECT IS DIRECTED TOWARD UTILIZATION OF HOT WATER GEOTHERMAL RESOURCES IN LOCATIONS WHERE A LARGE GENERATING PLANT IS NOT JUSTIFIED. A BASIC SYSTEM CONCEPT INCLUDES EQUIPMENT ARRANGED IN MODULES FOR EASE OF TRANSPORTATION AND INSTALLATION. THE TENTATIVE SIZE RANGE IS 2-5 MW. ALL COMPONENTS ARE TO BE CONVENTIONAL ITEMS, AVAILABLE WITHOUT DEVELOPMENT EFFORT.

THE RATIONALE FOR CONVENTIONAL COMPONENTS IS THAT THEY ARE CURRENTLY AVAILABLE, ON TIME SCHEDULES CONSISTENT WITH THE OBJECTIVES OF A CCMS PROJECT ON SMALL GEOTHERMAL POWER PLANTS. OPERATING EXPERIENCE IS NEEDED FOR MANY OF THE KNOWN GEOTHERMAL AREAS OF THE WORLD. PRIME MOVERS UNIQUELY DESIGNED FOR THE GEOTHERMAL ENVIRONMENT ARE IN DEVELOPMENT IN MANY PLACES, BUT WILL NOT BE SUFFICIENTLY CHARACTERIZED IN TIME FOR AN APPLICATION IN APPROXIMATELY THREE YEARS.

EXPERIMENTAL MODELS ARE NOT CONSIDERED APPROPRIATE FOR A DEMONSTRATION APPLICATION.

UNCLASSIFIED

PAGE 04 STATE 096963

THREE PHASES OF ACTIVITY CAN BE IDENTIFIED IN THE COMPLETE PROJECT.

PHASE I: A REPORT, TO BE COMPLETED BY JANUARY 1976, CONSISTING OF SIX PARTS.

- A. SYSTEM CONCEPT DESCRIPTION
- B. SUMMARY OF POSSIBLE SITES FOR APPLICATIONS
- C. ALTERNATE DESIGNS FOR SYSTEM ELEMENTS
- D. DESIGN INFORMATION FOR COMPLETE SYSTEM
- E. SUMMARY OF EXPERIENCES WITH SMALL POWER PLANTS
- F. ANNOTATED BIBLIOGRAPHY PERTAINING TO SMALL POWER
- PLANTS
- G. LIST OF SUPPLIERS OF EQUIPMENT AND SERVICES

AMPLIFYING PARTS OF PHASE I, WE WOULD DEFINE A "SYSTEM" AS CONSISTING OF A SEPARATOR, TURBINE, AND GENERATOR (INCLUDING APPROPRIATE ELECTRICAL CONTROL EQUIPMENT.) ALL OF THESE ITEMS SHOULD CONSIST OF CONVENTIONAL EQUIPMENT, REQUIRING LIMITED DESIGN EFFORT AND NO DEVELOPMENT.

ITEM (D), "DESIGN INFORMATION," REFERS TO A LISTING OF EQUIPMENT AVAILABLE FROM THE PARTICIPATING COUNTRIES. DATA WILL BE PRESENTED IN TABULAR FORM OR GRAPHICALLY TO SHOW THE RANGE OF OPERATING CONDITIONS FOR EACH ELEMENT OF THE OVERALL SYSTEM.

ALTERNATE DESIGNS MIGHT CONSIST OF VARIATIONS, INCLUDING FOR EXAMPLE, TYPES OF SEPARATORS, INCLUSION OF SCRUBBERS, IMPULSE VERSUS REACTION TURBINES, SINGLE VERSUS MULTIPLE TURBINE STAGES.

PHASE II: APPLICATION OF THE CONCEPT TO ONE OR MORE PARTICULAR SITES.

THE SITE SELECTED FOR A DEMONSTRATION SHOULD BE REPRESENTATIVE OF THOSE POTENTIALLY SUITABLE FOR APPLICATION OF THE CONCEPT. THE DATA EXTRACTED FROM AN INITIAL APPLICATION SHOULD BE USEFUL IN PLANNING UTILIZATION OF OTHER AVAILABLE RESOURCES. THE PLANT SHOULD BE EASILY UNCLASSIFIED

PAGE 05 STATE 096963

ACCESSIBLE FOR EXAMINATION AND EQUIPMENT INSTALLATION. THE CAPABILITIES AND INTERESTS OF THE HOME COUNTRY REGARDING SUPPORT FOR THE DEMONSTRATION UNIT MUST ALSO BE CONSIDERED.

PHASE III: A SUMMARY REPORT WILL BE PREPARED ON RESULTS AND EXPERIENCE GAINED FROM THE WORK OF PHASE II.

THE PRESENT SURGE OF ACTIVITY ON GEOTHERMAL ENERGY MAKES IT IMPOSSIBLE TO SETTLE ALL ASPECTS OF THE TOPIC OF SMALL POWER PLANTS. HOWEVER, INFORMATION ON SPECIFIC SITE REQUIREMENTS, A SUMMARY OF RELATED EXPERIENCE AND DESIGN DATA FOR AVAILABLE TECHNOLOGY SHOULD PERMIT CONSIDERATION OF THE APPLICATION OF SMALL GEOTHERMAL POWER PLANTS IN MANY PLACES.

COMMENTS ARE REQUESTED ON THE GENERAL NATURE OF THIS PROGRAM AND THE TENTATIVE TIME SCHEDULE SUGGESTED BELOW. A FIRM SCHEDULE WILL BE ESTABLISHED AT A LATER DATE. OF PARTICULAR INTEREST TO THE UNITED STATES, TO HELP IN FORMULATION OF DETAILED PLANS, IS A STATEMENT OF EACH PARTICIPATING COUNTRY'S GENERAL OBJECTIVES PERTAINING TO SMALL GEOTHERMAL POWER PLANTS. ALSO, EACH PARTICIPATING COUNTRY SHOULD NAME AN INDIVIDUAL TO ACT AS COORDINATOR FOR THE PROJECT.

A TENTATIVE PHASE I TIME SCALE FOLLOWS:

- A. DISTRIBUTE PROGRAM PLAN TO POTENTIAL PARTICIPANTS APRIL, 1975
- B. MEETING TO DISCUSS DETAILS JUNE, 1975

- C. MEETING RELATIVE TO USER APPLICATION SEPTEMBER, 1975
- D. COLLECT RESPONSES TO SUGGESTED DECEMBER, 1975
- PROGRAM
- E. COMPILE AVAILABLE INFORMATION APRIL, 1976
- F. DEVELOP DESIGN PROCEDURE JULY, 1976
- G. PUBLISH REPORT OF PHASE I SEPTEMBER, 1976

COMMENTS, SUGGESTIONS AND INFORMATION PERTAINING TO THIS
PROJECT SHOULD BE SENT TO:

UNCLASSIFIED

PAGE 06 STATE 096963

ANDERS W. LUNDBERG, L-505
LAWRENCE LIVERMORE LABORATORY
P.O. BOX 808
LIVERMORE, CALIFORNIA 94550
U.S.A.

KISSINGER

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Message Attributes

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